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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,164	10/29/2001	Wade W. Smith	WMS-15	9573

7590 12/09/2003

Spencer T. Smith  
53 Silver Brook Lane  
North Granby, CT 06060

EXAMINER

BORISSOV, IGOR N

ART UNIT	PAPER NUMBER
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3629

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/055,164

Applicant(s)

SMITH, WADE W.

Examiner

Igor Borissov

Art Unit

3629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3 and 4 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Longini (US 4,509,679) in view of Proffitt et al. (US 5,415,024).**

**As per claims 1 and 4,**

Longini teaches an energy use monitoring system within an apartment unit, wherein a quantity of energy used by each apartment unit is proportional to the volume of fluid received, which is metered by change in flow, multiplied by the temperature difference between the received and the returned water (column 1, lines 54-62). The readings for each unit are accumulated over time, suggesting the identification of each unit (column 1, lines 63-64).

However, Longini does not specifically teach a pair of pressure/temperature transducers to be connected proximate the upstream and downstream sensing points of a heat transfer device for supplying temperature and pressure data to said register.

Longini, also, does not specifically teach that computation of energy use, which is conducted by multiplying the change in flow by the temperature difference between the received and the returned water, includes a multiplication of square root of said change in pressure by said temperature difference.

Proffitt et al. teach an apparatus used to measure the energy input and the heat loss from the apparatus, comprising an insulation (18), pressure and temperature sensors disposed upstream and downstream from insulation (18) for computing a change in pressure and temperature, and a controller to which the input of measurements are directed (column 3, lines 55-column 4, lines 25; column 9, lines 5-7).

Official notice is taken that it is well known from thermodynamic principles that flow (in pipes) is directly related to the square root of the pressure change across it controlling flow impedance.

Therefor, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Longini to include a pair of pressure/temperature transducers to be connected proximate the upstream and downstream sensing points of a heat transfer device, because it would increase the accuracy of energy used measurement, thereby make it more attractive to the customers.

**Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Longini and Proffitt et al. in view of Saar et al. (US 6,430,514).**

**As per claim 3,** Longini and Proffitt et al. teach all the limitations of claim 3, except that the serial number of the heat transfer device is transmitted.

Saar et al. teach a water management system for an apartment including a number of water consuming devices each equipped with flow and temperature metering monitors, wherein each monitor transmits a data package to a host computer, said data package including a serial number (column 2, lines 2-4).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Longini and Proffitt et al. to include that the serial number of the heat transfer device is transmitted to a host computer, because it would enhance the accuracy of volumetric calculations in water monitoring systems.

***Allowable Subject Matter***

**Claim 2** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure (see form PTO-892).

Any inquiry concerning this communication should be directed to Igor Borissov at telephone number (703) 305-4649.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Receptionist whose telephone number is (703) 872-9306.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John Weiss, can be reached at (703) 308- 2702.

Any response to this action should be mailed to:

***Commissioner of Patents and Trademarks***

***Washington D.C. 20231***

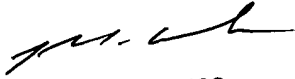
or faxed to:

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**(703) 872-9306** [Official communications; including After Final  
communications labeled "Box AF"]

Hand delivered responses should be brought to Crystal Park 5, 2451 Crystal  
Drive, Arlington, VA, 7<sup>th</sup> floor receptionist.

IB

  
**JOHN G. WEISS**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 3600**